Pollution Prevention Plan

for

Hancock Brook Lake

May 1996

US Army Corps
of Engineers
New England Division

POLLUTION PREVENTION PLAN

LOCATION:

HANCOCK BROOK LAKE
PLYMOUTH, CONNECTICUT

PREPARED BY:

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New England Division

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1. INTRODUCTION

a. Background Information. Executive Order (EO) 12856, "Federal Compliance with Right-To-Know Laws and Pollution Prevention Requirements," was signed by the President on 3 August 1993 to challenge the Federal Government to become a leader in pollution prevention, and be a good neighbor by providing local and State authorities with information concerning Federal Government use of toxic and hazardous chemicals and extremely hazardous substances.

The EO extends the coverage of the 1986 law "Emergency Planning and Community Right-to-Know Act" (EPCRA - 40 CFR 372) to Federal facilities. Private industry has been responding to the 1986 law since its inception, and the Federal community is now doing the same.

The requirements of EO 12856, and other related Environmental Executive Orders, were incorporated into a Comprehensive Pollution Prevention Strategy and signed by the Secretary of Defense on 11 August 1994. This strategy is effected across all the Departments, including the Department of Army, and the Corps of Engineers. EO 12856 applies to all Departments of Defense, Department of the Army, and Corps of Engineers facilities within the territory of the United States; in effect, all Corps of Engineers civil works facilities and projects.

The Director of Civil Works, issued a statement regarding the Corps policy for pollution prevention on 10 August 1995. He cited the environmental ethic and stewardship which are so much an integral part of the civil works community, and called upon the Corps family to embrace and implement all aspects of the President's EO.

One primary product of the EO is a Pollution Prevention Plan (P2 Plan) for "covered" Corps of Engineers civil works facilities and projects. Initially, projects and facilities reporting under any of the several sections of EPCRA are considered as "covered facilities," and have prepared plans leading to the reduction of pollution for their operations. Eventually, all facilities of any significant size will have a P2 Plan as a framework for pollution prevention and sound environmental practices.

Pollution prevention has as its focus the elimination or modification of activities to achieve a more desirable environmental end result. Pollution prevention includes any practice which reduces the amount of hazardous substances, pollutants, or contaminants entering the waste stream or otherwise released into the environment, prior to recycling, treatment, or disposal, and any practice which reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants. The Corps of Engineers early efforts at pollution prevention were sometimes referred to as "waste minimization."

b. Pollution Prevention Strategy for the Corps of Engineers. The Corps of Engineers welcomes the President's vision as expressed in EO 12856 that . . . "Federal facilities will set the example for the rest of the country and become the leader in applying pollution prevention to daily operations, purchasing decisions, and policies . . . " The Corps reaffirms its obligations as a responsible neighbor in communities where our civil works facilities and projects are located. Pollution prevention at Corps facilities will not only reduce the amount of potentially harmful substances that are released, it will provide a safer environment for visitors, contractors, and employees, and a safer environment for communities near Corps facilities. Pollution prevention has the additional benefit of conserving our valuable and finite natural resources, and will prevent costly cleanup of facilities, waters, and lands. Corps participation in community right-to-know efforts will ensure that we are responsive to community needs and that our facilities appreciate their responsibility as part of the community.

The U.S. Environmental Protection Agency (EPA) recommends the following seven step process for pollution prevention.

- Develop Pollution Prevention Goals.
- Obtain Management Commitment.
- Establish a Pollution Prevention Team.
- Develop a Baseline.
- Conduct Pollution Prevention Opportunity Assessments.
- Develop Criteria and Rank Activities/Opportunities.
- Conduct a Management Review.

This document addresses the complete process, with a focus on what management needs to finalize a comprehensive pollution prevention program.

Pollution prevention opportunity assessments lead to identification of techniques and technologies to reduce waste generation. Pollution prevention opportunity assessments are achieved through in-house efforts, contracts with environmental firms, use of personnel from other Corps offices, with EPA or other regulators, or through combinations of these elements.

2. APPENDICES/DEFINITIONS

Appendices are provided to the project under separate cover.

Definitions of terms and acronyms used in this plan are listed in the Glossary in Appendix M.

3. PURPOSE AND OBJECTIVES

Hancock Brook Lake will fully support the Corps of Engineers pollution prevention policy and goals through the following specific objectives; By 1 July 1996, Hop Brook Lake personnel will: (a) Identify specific waste generating processes and develop a baseline inventory of major categories of wastes produced, and (b) prioritize waste problems and/or inefficiencies for the Hancock Brook facility.

By 31 December 1996, Hop Brook Lake will develop a strategy for Hancock Brook Lake using the Pollution Prevention Opportunity Assessments and other technical sources to reduce the use of hazardous materials, minimize production of hazardous and other wastes, and eliminate pollutant emissions to the environment to the maximum extent technologically and economically feasible.

The Hancock Brook Lake P2 Plan provides a strategy and list of action items to integrate pollution prevention into all activities and processes. The plan provides a process for development and implementation of a facilitywide, multimedia P2 Plan that will enable this facility to meet all pollution prevention plans and goals. The result will be more efficient operations, and a cleaner, safer working environment.

4. CORPS OF ENGINEERS PHILOSOPHY AND POLICY ON POLLUTION PREVENTION

As previously noted, pollution prevention is a "source reduction" approach to creating a better environment. It reaches beyond the end-of-pipe or end-of-stack solutions to avoid the generation of waste or environmental releases, and stresses the management of all environmental media (air, land, water) together. The Corps subscribes to a hierarchy of options for managing waste. Source reduction is the most desirable, then recycling treatment, and disposal complete the hierarchy. These will be discussed in greater detail in this plan.

Pollution prevention can be achieved through a number of activities: process efficiency improvement, material substitution, inventory control, preventive maintenance, and improved housekeeping. Often these activities will require capital investments to implement. The basic cost of these pollution prevention actions may be significant; however, the savings or cost avoidance over a reasonable investment period due to reduced energy, materials, labor, compliance costs, or environmental consequences, make these cost effective. This "life-cycle" cost estimating is the recommended approach to implementing pollution prevention measures.

5. CORPS OF ENGINEERS GOALS IN POLLUTION PREVENTION

EO 12856 sets a goal of 50 percent reduction of toxic chemicals by 31 December 1999. The goal applies to the agency (Department of Army) in its use of toxic chemicals (facilities covered by section 313 of EPCRA). Hancock Brook Lake does not meet the requirements of section 313 (TRI) pollutants and does not report against the 50 percent reduction goal.

New England Division (NED) has set a target of 25 to 50 percent reduction of a river basin's waste stream by 31 December 1999. This goal is the sum total percent reduction at each water control project within the respective river basin. The baseline year for calculating the reduction of a river basin's waste stream is 1994. This year was chosen as a baseline to reflect the pollution prevention measures/waste reduction activities that were carried out prior to issuance of this plan.

Page 6 is a worksheet designed to facilitate tracking the project's waste reduction. Total volume and percent

reduction of each waste category should be calculated each year. Percent reduction is calculated using the baseline year (1994). This worksheet allows Hop Brook Lake personnel to track the reduction of certain wastes and observe if they are on target for reaching their waste reduction goals at Hancock Brook Lake.

Another goal for NED's water control projects is to reduce all hazardous substances/wastes to levels below reportable quantities/limits. The reportable quantities/-limits observed shall be the more restrictive of those set by the State or Federal Government.

Also, all chemical/oil storage tanks at each project shall have an approved secondary containment structure. If in the future, an oil storage tank is installed at Hancock Brook Lake, the approved structure should follow Federal Regulation 40 CFR 112.7 (see Appendix L) and the Corps of Engineers EM 385-1-1, section 09.B.27(d). Check the SPCCP/SCP for Hancock Brook Lake, available at Hop Brook Lake, for additional information on secondary containment.

Following is a table summarizing the goals concerning pollution prevention. These goals are also listed in Appendix F, Hancock Brook Lake's Pollution Prevention Strategy Sheet, in the event subsequent goals need to be added.

HANCOCK BROOK LAKE'S POLLUTION PREVENTION STRATEGY		
Goal	Established By	Target Date
Contribute to the 25 to 50% reduction of the total waste stream within the Naugatuck River Basin.	NED	1999
Reduce all hazardous substances/wastes located at Hancock Brook Lake to quantities below reportable quantities/ limits that are set by the CT DEP.	NED	1999

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Hancock Brook Lake Waste Reduction Worksheet

Material	1994 (Baseline Year) Total Volume	1995 Total Volume	1995 % Reduction	1996 Total Volume	1996 % Reduction	1997 Total Volume	1997 % Reduction	1998 Total Volume	1998 % Reduction	1999 Total Volume	1999 % Reduction
Hazardous Wastes											
Petroleum, Oil, and Lubricants (POLs)	0	0									
Paints and Allied Products	0	0									
Chemicals and Solvents	0	0									
Asbestos	0	0									
Treated Wood	0	0									
Equipment/Vehicle Maintenance Wastes	0	0									
Other	0	0									
Non-Hazardous Wastes											
Recyclable Wastes	0	0									
Compostable Wastes	0	0									
Non-recyclable Wastes	0	0									
Construction and Demolition	0	0									
White Metal Goods	0	0									
Tires	0	0									
Other	0	0									

6. ASSUMPTIONS

a. This plan is in effect and implemented continuously.

b. The Naugatuck River Basin Manager is responsible for pollution prevention at Hancock Brook Lake.

7. PROJECT DESCRIPTION AND LOCATION

Hancock Brook Lake is located in west-central Connecticut on Hancock Brook, in Litchfield County, approximately 3.4 miles upstream of its confluence with the Naugatuck River and about 4.5 miles north of the town of Waterbury, CT (see vicinity map in figure 1, Appendix A). The project lies within the town of Plymouth, CT. Hancock Brook Lake, placed in operation by the Corps in August 1966, is used for flood control and recreation, and is 1 of 5 flood control projects operated by the Corps in the Naugatuck River Basin. A basin map is shown in figure 2, Appendix A.

The project site is located in the western Connecticut highlands, an area of plateau remnants sloping gently to the southeast with narrow steep-sided valleys controlled by hard pretriassic crystalline rocks. The topography of the site presents a moderate relief of approximately 400 feet. Glacial till mantles the lower slopes of the valleys and is overlain by waterlain deposits along margins of the valleys.

Hancock Brook, at the dam site, flows on alluvial deposits of gravels, sands, and silts in a restricted channel approximately 175 feet wide. The left abutment of the dam is formed by a smoothly contoured, outwash mantled, drumloidal shaped hill, which is separated from the easterly side of the valley by a sharp, indicated fault-controlled defile presently containing Greystone Road. Bedrock outcrops infrequently on the right abutment through a thin mantle of glacial outwash.

Project components consist of a rolled earth dam with rock slope protection, chute spillway, outlet works, bubble gage shelter, and storage for both flood control and recreation. The dam consists of rolled-earth fill, with rock slope protection, 630 feet in length with a maximum height of 57 feet above the streambed. The top width is 20 feet, and the elevation for the top of embankment is 505 feet NGVD (National Geodetic Vertical Datum of 1929). The dam has a

100-foot uncontrolled chute spillway located adjacent to the right abutment of the dam. The crest elevation of the spillway is 484 feet NGVD. The outlet works are located on the right bank and consist of an inlet channel, a U-shaped concrete weir to control the permanent pool, a 3 foot by 4-foot 6-inch high rectangular conduit 250 feet in length, and an outlet channel. General layout of the dam is shown in figure 3, Appendix A.

Hancock Brook Dam consists of 721 acres, with 707 owned in fee and 14 acres in easement. The dam is operated for flood control and has a storage capacity of 3,900 acre-feet at spillway crest, equivalent to 6.13 inches of runoff from the 12-square mile drainage area. A reservoir map is shown in figure 4, Appendix A.

8. ROLES AND RESPONSIBILITIES

a. Commander

(1) Exercise overall control of Division facilities, NED personnel, and contractor personnel who manage pollution-generating activities.

(2) Support programs and budgets for personnel, materials, equipment, and training required to implement pollution prevention strategies.

(3) Ensure coordination between various Division elements regarding the compliance of contractors and other pollution prevention partners.

b. Director of Operations

(1) Exercise overall control of NED's flood control facilities, Corps personnel, including those of the contractor, that manage or contribute to pollution generating activities.

(2) Ensure that pollution prevention measures accomplish acceptable reduction levels.

(3) Support programs and budgets for personnel, materials, equipment, and training required to implement pollution prevention strategies.

c. Environmental Compliance Coordinator

(1) Review and approve P2 Plan, revisions, and amendments.

(2) Integrate pollution prevention in the Division's Comprehensive Environmental Stewardship program and oversee field office staff concerning pollution prevention methods.

(3) Coordinate development of pollution prevention opportunity assessments and preparation of field office P2 Plans. Review plans for effectiveness and compliance with environmental regulations. Coordinate review of plans by internal Division elements and those outside NED.

(4) Prioritize funding for pollution prevention activities and equipment.

(5) Prompt periodic reviews and evaluations of P2 Plans to monitor the performance of pollution prevention projects (reviews will be conducted according to the schedule determined most appropriate [ERGO, etc.], or as significant waste stream changes occur). The periodic reviews will include whether more effective prevention and control applications are available for use in the facility's P2 program.

(6) Advise Director of Operations when the P2 Plan is not in compliance with regulatory requirements.

d. Chief, Environmental Engineering and Hydraulics Branch

(1) Supervise production and review of P2 Plan for conformance and compliance with applicable Federal, State, and local regulations.

(2) Execute periodic technical reviews of P2 Plan.

e. Naugatuck River Basin Manager

(1) Exercise overall control of Hop Brook Lake personnel who are involved in waste generating activities at Hancock Brook Lake.

(2) Ensure that pollution prevention is accomplished to acceptable levels.

(3) Coordinate with non-Corps elements (e.g., contractors, State and local regulators, etc.) regarding compliance of contractors and waste generators.

(4) Maintain the P2 Plan for Hancock Brook Lake on file at Hop Brook Lake.

(5) Program and budget for Hop Brook Lake personnel, materials, equipment, and training required for implementing pollution prevention strategies at Hancock Brook Lake.

(6) Revise and resubmit the P2 Plan whenever there is a significant change in facility design, construction, operation, or maintenance which affects the facility's waste streams.

(7) Manage preparation and amendments of the Hancock Brook Lake P2 Plan.

(8) Review deficiencies and initiatives to improve pollution prevention in the first month of each quarter and follow through to completion.

(9) Ensure that all waste streams at the project are addressed in the P2 Plan.

(10) Perform periodic management actions to verify compliance with the P2 Plan for Hancock Brook Lake by Hop Brook Lake personnel. Maintain informal documentation to support inspections and any subsequent program revision.

(11) Prepare and update baselines for hazardous material use and waste generation.

(12) Perform periodic visual surveillance of Hancock Brook areas under Hop Brook Lake's responsibility to verify compliance with this plan.

(13) Maintain any special equipment and material used for pollution prevention at the project.

(14) Investigate potential pollution prevention opportunities as changes in waste streams occur.

(15) Coordinate with project manager at Hop Brook Lake regarding pollution prevention training programs.

9. FUNCTIONS AND ACTIVITIES:

a. Routine Activities. Typical activities at Hancock Brook Lake include maintenance of flood control facilities, mowing embankments and grounds, debris and sediment removal from the reservoir, and repair and servicing of mechanical equipment and structures. These activities require the handling of oil, and other petroleum and chemical products.

These activities are normally contracted out to commercial companies (contractors) who perform the work. Any waste oil/chemicals generated (e.g., from the use of chain saws, engines, etc.) during their work is disposed of by the contractor. In the case of a contractor's noncompliance with safety and environmental standards, Corps officials have the option of stopping his work and/or seeking compensation from him for expenses incurred in fulfilling safety or environmental obligations.

If a situation arises where waste oil is generated at Hancock Brook Lake by Hop Brook personnel (e.g., emergency oil change on a Corps owned vehicle or piece of equipment), the waste oil is taken to a local treatment, storage, and disposal facility (TSD) certified by the State of Connecticut.

Hancock Brook Lake is registered as a small quantity generator with the U.S. EPA. This registration, as a small quantity generator, addresses the issue of generating, handling, and disposing waste oil by Hop Brook Lake personnel. The project's EPA small quantity generator ID Number is CT960015492. The recommended procedure for project personnel to follow when generating waste oil is outlined in the Spill Prevention, Control, and Countermeasure Plan/Spill Contingency Plan (SPCCP/SCP) for Hancock Brook Lake, which is available at the Hop Brook Lake project.

b. Leased Areas. Approximately five acres of land at Hancock Brook Lake are leased out for agricultural purposes. Pollution prevention for lessee facilities and activities on Corps lands are the responsibility of the "lessee," also referred to as the "lease area operator." Where leased areas are mandated by Federal or State Regulations to have and maintain a pollution prevention plan, the lessee will comply with appropriate pollution prevention requirements and State and Federal Regulations.

c. Oil Tanks. There are no oil storage tanks at Hancock Brook Lake.

d. Paint Locker. There is no onsite storage of oil or chemical products at the project. Chemicals and materials used at Hancock Brook Lake are stored in the paint locker at the Hop Brook Lake office (refer to Hop Brook Lake P2 Plan for inventory of products).

e. Waste Streams. There are no areas at Hancock Brook Lake where waste is generated. Appendix E contains a list of specific processes and associated wastes that could be generated by these processes which may occur in the future at Hancock Brook Lake.

10. JURISDICTION

The Connecticut Department of Environmental Protection (DEP), Central Region Office (telephone: 203-566-3338), and the U.S. Environmental Protection Agency, Region I, Boston, Massachusetts, (telephone: 617-223-7265) are the State and Federal agencies coordinating with Hop Brook Lake personnel regarding pollution prevention at Hancock Brook Lake.

11. ENVIRONMENTAL REVIEW GUIDE FOR OPERATIONS (ERGO) PROGRAM

Hancock Brook Lake complies with Corps policy and is assessed for environmental compliance by an external team every five years. An environmental compliance assessment of the project was conducted by an interdisciplinary team of New England Division environmental professionals (external team) on 1 June 1994. The assessment was conducted as part of the Corps ERGO program, which establishes the use of environmental compliance assessments to ensure compliance with all applicable Federal, State, local, Department of Defense (DOD), and U.S. Army laws and regulations. This facility's next external assessment is scheduled for 1999.

Each year Hop Brook Lake personnel perform an assessment of Hancock Brook Lake's environmental compliance status.

12. SCOPE OF POLLUTION PREVENTION PLAN

The P2 Plan applies to all activities at the project.

Concession, outgrant, and lease area activities are not considered in the Hancock Brook Lake P2 Plan; however, all

non-Corps activities will be encouraged to implement similar pollution prevention strategies.

13. UPDATE FREQUENCY

The Hancock Brook Lake P2 Plan should be updated every five years during the same fiscal year as the ERGO external assessment. The next update is scheduled for 1999.

Scheduling of P2 Plan updates the same time as ERGO assessments leads to improved coordination, preventing duplication of work. The P2 Plan update will address changes in policy and procedures, product substitutions, process changes, and other pertinent information. The review and updating will include a summary of goals met and revised objectives.

14. TRAINING

To implement a successful pollution prevention program, communication and training are crucial to convey up-to-date information, and to foster a pollution prevention ethic that is supported by the entire facility staff. Since 1993 the Corps has provided information and guidance to Division Environmental Compliance Coordinators (ECCs) on compliance with EO 12856 and other Pollution Prevention Executive Orders and Policy Directives. Headquarters, Environmental Compliance Branch of Operations, Construction and Readiness Division, (CECW-OA) will continue providing information on policy and regulations through the Division ECC, who will forward information to each basin. While there are no specific requirements for pollution prevention training, all facility staff will receive pollution prevention awareness and energy efficiency training. This training may take place during biweekly safety meetings. Technical information on pollution prevention strategies and training opportunities may be obtained from sources outside the Corps such as State EPA Pollution Prevention Coordinators. Additional sources of pollution prevention information can be found in Appendix I.

15. PUBLIC INFORMATION

Executive Order 12856 requires projects and facilities to provide the public with access to their pollution prevention plans and programs. In compliance with this EO, these plans will be maintained onsite for review by the public, EPA, and State regulators; a copy will be provided to regulatory agencies upon request.

16. COORDINATION WITH CONTRACTING AND LOGISTICS DIRECTORATES

In order to comply with pollution prevention requirements changes in purchasing materials or contracting for services may be necessary. Executive Order 12873 requires that Federal agencies procure products that are environmentally preferable or made with recycled materials. Executive Order 12843 requires that Federal agencies maximize use of alternatives to ozone-depleting substances. Executive Order 12845 requires that new computer purchases meet "Energy Star" efficiency requirements. New requirements will continue to be developed. Technical specifications and General Services Administration (GSA) contracts may not all be up-to-date on these requirements.

The Naugatuck River Basin Manager will coordinate closely with the Division Contracting and/or Logistic staff to ensure that all future purchases and disposal actions are not only in compliance with specific requirements, but also support the project and agency goals for pollution prevention.

17. IMPLEMENTATION GUIDANCE

Following are guidelines for management of wastes at the Hancock Brook project:

a. Waste should be reduced at the source whenever possible.

b. If it is determined that a waste can be recycled, it should be done to the fullest extent possible.

c. Wherever possible and economically practical, non-toxic/hazardous replacements for hazardous materials should be used.

d. Storage, disposal, and recycling of wastes should comply with all appropriate Federal, State, local, and U.S. Army Regulations/requirements.

e. Hazardous waste should be safely controlled, accounted for with an audit trail and chain of custody, and handled in accordance with legal requirements.

For specific management practices of hazardous and non-hazardous wastes, refer to appropriate Federal, State, and local regulations/guidelines.

18. IMPLEMENTATION PLANS

a. Hazardous and Nonhazardous Wastes. All wastes should be segregated and identified as hazardous or non-hazardous. Waste definitions are shown in Appendix M.

Hazardous and nonhazardous wastes have different disposal requirements (see State Regulations for specific requirements); and segregation of wastes will streamline the disposal process.

b. Substitute Products. Project personnel at Hop Brook Lake shall purchase and use alternative, nontoxic products in place of hazardous materials where feasible. Substances such as ethylene-glycol antifreeze should be replaced with propylene-glycol antifreeze. Liquid-cell batteries in project vehicles should be replaced with batteries that have a gel-type substance in their cells.

The Defense Logistics Agency (DLA) provides catalogs listing products and their respective alternatives. To order these catalogs or request information on alternative products call DLA at 1-800-345-6333. Appendix J contains a list of various centers within the DLA supplying information on alternative products.

c. Purchasing of Products. Purchase of paints, pesticides, and other hazardous substances should be kept to a minimum, or on an "as needed" basis. Any residual quantity should be disposed of in compliance with Federal and State Regulations.

d. Material Safety Data Sheets (MSDS). MSDS for all inventory products should be kept on file at Hop Brook Lake. For products no longer on site, the respective MSDS should be removed from the file. An accurate inventory of products used, location, and quantities on hand shall be kept at the Hop Brook Lake project to assist in managing of MSDS.

e. Paints and Thinners. Paints, stains, and thinners used at the project are stored at Hop Brook Lake. The Basin Manager will devise a plan for reducing and disposing the surplus in accordance with all appropriate regulations and in an environmentally safe manner. The plan shall establish a specific reduction goal (percentage reduced and by what year).

f. Hazardous Waste Disposal. All hazardous waste should be disposed of through a licensed hauler and sent to a licensed facility. A hazardous waste manifest will accompany all materials, and appropriate record keeping will be maintained. Only Hop Brook Lake personnel authorized by the Division Commander may sign/execute the manifests. This authorization must be in writing and stating the employee is within the scope of work when executing these documents. All records pertaining to hazardous waste shall be maintained at the Hop Brook Lake office for three years.